

**ABSTRACT OF THE DISCLOSURE**

A method and apparatus for selective photothermolysis of a target tissue within surrounding tissue. The target and the surrounding tissue are heated to a predetermined temperature of about 60°C by a pulsed heat source such as a flash lamp which creates a temperature gradient in the air included in a cavity formed between the housing of the apparatus and the surrounding tissue. The surface temperature of the tissue is monitored by a sensor unit. When the tissue surface reaches the predetermined temperature the target tissue is heated to the point of coagulation, preferably by narrow band electromagnetic radiation. The temperature difference between the coagulating target and the surrounding tissue is sufficiently mild that heat diffusing out of the target does not damage the surrounding tissue, even in the case of a relatively large target such as varicose veins. The heating action may be terminated by automatically pumping air or another suitable coolant into the cavity when the surface of the tissue reaches a preset value or by lifting the apparatus off the tissue. The apparatus may include a programmable controller which may be programmed locally or remotely with the treatment parameters.